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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,439	08/07/2006	Taisei Suemitsu	294601US2PCT	8392
22850	7590	01/29/2010		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER HAIDER, SYED	
			ART UNIT	PAPER NUMBER
			2611	
			NOTIFICATION DATE	DELIVERY MODE
			01/29/2010	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/588,439	<b>Applicant(s)</b> SUEMITSU ET AL.	
	<b>Examiner</b> SYED HAIDER	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This action is in response to the Amendment filed on 11/05/2009. Claims 1-7, are pending with claim 1, 2, and 6, being further amended.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1-7, have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 6 and claim 7, are rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama (JP 2002-141821) and further in view of Filipovic (US PGPub # 2004/0120421).
5. As per claim 1, and claim 7, Akiyama discloses a wireless apparatus comprising:  
a mixer (Akiyama, Fig. 2:6) to convert a frequency of a received signal (Akiyama, Fig. 2:5);

an analog filter (Akiyama, Fig. 2:7) for filter the received signal (Akiyama, Fig. 2:5) whose frequency has been converted by said mixer (Akiyama, Fig. 2:6); an analog-to-digital converter (Akiyama, Fig. 2:11) to convert the received analog signal filtered by said analog filter into a digital signal (Akiyama, Fig. 2:11, which converts the received analog signal into digital);

a digital filter (Akiyama, Fig. 1:3) having a band limiting characteristic which is inverse to that of said analog filter with respect to an ideal filter (Akiyama, paragraph#10, explains that a calculating means performs a filter operation using a digital filter which has the characteristic contrary to the delay characteristics of an analog bandpass filter to a perverted received signal), to filter the digital signal into which the received signal has been converted by said analog-to-digital converter (Akiyama, paragraph#10, explains that a calculating means performs a filter operation using a digital filter which has the characteristic contrary to the delay characteristics of an analog bandpass filter to a perverted received signal.); and

that the filtering by said digital filter (Akiyama, Fig. 1:3) will increase distortion of the received signal (Akiyama, paragraph#10).

Akiyama does not disclose a digital filter control unit.

Filipovic discloses a digital filter control unit (Filipovic, Fig. 1:24, control unit, which controls the digital filter) to disable the filtering of the digital signal (Filipovic, paragraph#22, explains that a control unit 24 may send control signals 25 to selectively enable or disable digital filter 20 based on the current wireless protocol being supported).

when determining from a power level or an amplitude level of the received signal (Filipovic, paragraph 29, which explains that “in any case, control unit 24 may selectively enable or disable one or more digital filters based on the selected protocol. In other embodiments, the selection of the current protocol may be based on measurements of a received signal rather than user input. In that case, control unit 24 may automatically enable or disable the digital filter when a protocol is identified based on a received signal” so it is obvious that control unit will measure the power level of received signal to enable or disable the digital filter. See Further in paragraph 55).

At the time of the invention it would have been obvious to one ordinary skill in the art to modify Akiyama teachings by implementing the control unit to the radio apparatus, as taught by Filipovic.

The motivation would be to provide a wireless device which can support two or more wireless protocols efficiently and distinct components conventionally used in wireless device that support a plurality of protocols may be eliminated in favor of one or more components that can be used in the communication modes associated with the different wireless protocols.

6. As per claim 6, Akiyama in view of Filipovic further discloses the wireless apparatus according to Claim 1, wherein said digital filter includes an output selecting unit to select (Akiyama, paragraph#34) and output the received signal which has been filtered by said digital filter (Akiyama, Fig. 1:3) or the received signal which has not been filtered by said digital filter according to enabling or disabling control of the filtering of

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the digital signal (Filipovic, paragraph#22, explains that a control unit 24 may send control signals 25 to selectively enable or disable digital filter 20 based on the current wireless protocol being supported) by said digital filter control unit (Filipovic, Fig. 1:24, control unit, which controls the digital filter).

7. Claims 2-5, are rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama (JP 2002-141821) and further in view of Filipovic (US PGPub # 2004/0120421) and further in view of Nakamura (US PGPub # 2002/0176364).

8. As per claim 2, Akiyama in view of Filipovic further discloses the wireless apparatus according to Claim 1, wherein said digital filter control unit (Filipovic, Fig. 1:24, control unit, which controls the digital filter) includes which said digital filter control unit uses when disabling the filtering of the digital signal (Filipovic, paragraph#22, explains that a control unit 24 may send control signals 25 to selectively enable or disable digital filter 20 based on the current wireless protocol being supported) by the digital filter (Akiyama, Fig. 1:3),

Akiyama in view of Filipovic does not disclose receive level detector to detect the receive level of the received signal, a threshold storage unit to store a receive level threshold.

Nakamura discloses a receiver level detector to detect (Nakamura, Fig. 1:5, and further in paragraph#47, it explains that the radio frequency signal receiving unit 5 in accordance with the present embodiment has a function of measuring the signal levels of the radio frequency signals as received and outputting measurement results to the signal level storing unit 9) and a level comparison unit (Nakamura, Fig. 1:8).

according to a comparison between the receive level detected (Nakamura, paragraph#54, explains that the threshold level comparing unit 8 reads out the threshold level stored in the threshold level storing unit 10, extracts the carrier numbers corresponding to the signal levels (the result of the operation) within the range determined by the threshold level (for example, the signal levels exceeding or falling under the threshold level) by comparing the threshold level as read with the result of the operation received from the calculation result storing unit 6, and then outputs the carrier numbers as extracted to the carrier number storing unit 7) by said receive level detector (Nakamura, Fig. 1:5) and the receive level threshold stored in said threshold storage unit (Nakamura, Fig. 1:10).

At the time of the invention it would have been obvious to one ordinary skill in the art to modify Akiyama in view of Filipovic teachings by implementing the radio frequency signal receiving unit and threshold level comparing and storing unit to the wireless communication system, as taught by Nakamura.

The motivation would be to provide a wireless communication system which relates to an interference detection method and an interference avoidance system for

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detecting interference with another wireless communication device and effectively avoiding the interference, as taught by Nakamura.

9. As per claim 3, Akiyama in view of Filipovic further in view of Nakamura discloses the wireless apparatus according to Claim 2, wherein said threshold storage unit stores (Nakamura, Fig. 1:10), as the receive level threshold which said digital filter control unit (Filipovic, Fig. 1:24, control unit, which controls the digital filter) uses when disabling the filtering of the digital signal by said digital filter (Filipovic, paragraph#22, explains that a control unit 24 may send control signals 25 to selectively enable or disable digital filter 20 based on the current wireless protocol being supported), a linear receive level high limit of the received signal (Akiyama, Fig. 2:5) which is influenced by an analog unit (Akiyama, Fig. 2:7) including the mixer (Akiyama, Fig. 2:6), the analog filter (Akiyama, Fig. 2:7), and the analog-to-digital converter (Akiyama, Fig. 2:11).

10. As per claim 4, Akiyama in view of Filipovic further in view of Nakamura discloses the wireless apparatus according to Claim 2, wherein said threshold storage unit stores (Nakamura, Fig. 1:10), as the receive level threshold (Nakamura, Fig. 1:8) which said digital filter control unit (Filipovic, Fig. 1:24, control unit, which controls the digital filter) uses when disabling the filtering of the digital signal (Filipovic, paragraph#22, explains that a control unit 24 may send control signals 25 to selectively enable or disable digital filter 20 based on the current wireless protocol being supported) by said digital filter (Akiyama, Fig. 1:3), a linear receive level low limit of the received signal (Nakamura,



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Fig. 1:8, which determines high or low limit of the received signal) which is influenced by an analog unit including the mixer (Akiyama, Fig. 2:6), the analog filter (Akiyama, Fig. 2:7), and the analog-to-digital converter (Akiyama, Fig. 2:11).

11. As per claim 5, Akiyama in view of Filipovic further in view of Nakamura discloses the wireless apparatus according to Claim 2, wherein said threshold storage unit stores (Nakamura, Fig. 1:10), as the receive level threshold (Nakamura, Fig. 1:8) which said digital filter control unit (Filipovic, Fig. 1:24, control unit, which controls the digital filter) uses when disabling the filtering of the digital signal by said digital filter (Filipovic, paragraph#22, explains that a control unit 24 may send control signals 25 to selectively enable or disable digital filter 20 based on the current wireless protocol being supported), a linear receive level high limit (Nakamura, Fig. 1:8, which determines high or low limit of the received signal) and a linear receive level low limit (Nakamura, Fig. 1:8, which determines high or low limit of the received signal) of the received signal (Akiyama, Fig. 2:5) which is influenced by an analog unit including the mixer (Akiyama, Fig. 2:6), the analog filter (Akiyama, Fig. 2:7), and the analog-to-digital converter (Akiyama, Fig. 2:11).

### ***Conclusion***

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SYED HAIDER whose telephone number is (571)270-5169. The examiner can normally be reached on Monday thru Friday 8:00AM to 5:00 PM Est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. H./  
Examiner, Art Unit 2611

/David C. Payne/  
Supervisory Patent Examiner, Art Unit 2611